

AMENDMENTS TO THE CLAIMS

In the Application, please amend the set of claims as hereinafter indicated.

1. (Currently Amended) A vehicle safety system comprising:
at least one light source;
at least one beam-forming assembly optically coupled to said at least one light source;
at least one emitter optically coupled to said at least one beam-forming assembly;
at least one object detection sensor operable to detecting detect at least one object and ~~generating generate~~ at least one object detection signal;
a controller coupled to said at least one beam-forming assembly and said at least one object detection sensor; and
a memory coupled to said controller and operable to storing store a plurality of selectable beam patterns[[,]];
wherein said controller is operable to select at least one beam pattern from said selectable beam patterns stored in said memory and accordingly control at least one said beam-forming assembly so as to configure light received from at least one said light source for emission via at least one said emitter to thereby produce at least one beam illumination pattern for enhancing visibility of a roadway;
wherein said controller is operable to selecting select at least one other beam pattern [[of]] from said selectable beam patterns in response to at least one said object detection signal so as to change at least one said beam illumination pattern emitted from at least one said emitter; and
wherein said controller is operable to adjusting illumination output of said at least one light source change at least one said beam illumination pattern emitted from at least one said emitter in response to at least one said object detection signal[[;]] ~~wherein adjusting said illumination output comprises by~~ adjusting [[an]] at least one beam illumination parameter selected from ~~at least one the group consisting of~~ beam pattern amplitude, beam location, beam focus, [[and]] beam angle, and beam shape.
2. (Canceled)
3. (Canceled)

4. (Currently Amended) A vehicle safety system as in claim 1, wherein said at least one said object detection sensor is a receiver and ~~receives~~ is operable to receive a communication signal from said at least one said object, and said controller ~~adjusting~~ is operable to adjust at least one said beam illumination output pattern in response to said communication signal.

5. (Currently Amended) A vehicle safety system as in claim 1, wherein said at least one said object detection sensor is a passive object detection sensor.

6. (Currently Amended) A vehicle safety system as in claim 1, wherein said at least one said object detection sensor is selected from ~~at least one~~ the group consisting of a radio frequency transceiver, a radio frequency receiver, a radio frequency sensor, an infrared transceiver, an infrared receiver, an infrared sensor, a laser transceiver, and a laser sensor.

7. (Currently Amended) A vehicle safety system as in claim 1, wherein said vehicle safety system further ~~comprising~~ comprises a transmitter coupled to said controller and transmitting operable to transmit a first communication signal, and at least one said object detection sensor ~~receiving~~ is operable to receive a second communication signal in response to said first communication signal and adjusting adjust at least one said beam illumination output pattern in response to said second communication signal.

8. (Currently Amended) A vehicle safety system as in claim 1, wherein said controller ~~adjusts said illumination output~~ is operable to adjust at least one said beam illumination pattern in response to at least one vehicle operating condition.

9. (Currently Amended) A vehicle safety system as in claim 8, wherein ~~said controller adjusts said illumination output in response to~~ at least one said vehicle operating condition is selected from ~~at least one~~ the group consisting of velocity, speed, directional heading, acceleration, location, steering wheel angle, brake status, throttle angle, turn signal status, traction control status, differential wheel speed, light status, turn indicator status, windshield wiper status, windshield wiper speed, and engine speed.

10. (Currently Amended) A vehicle safety system as in claim ~~[[1]]~~ 8, wherein said vehicle safety system further ~~comprising~~ comprises a navigation system coupled to said

controller, and said controller ~~receiving~~ is operable to receive information related to at least a portion of said at least one vehicle operating condition from said navigation system.

11. (Currently Amended) A vehicle safety system as in claim 1, wherein said controller ~~adjusts~~ is operable to adjust a vehicle state in response to at least one said object detection signal.

12. (Currently Amended) A vehicle safety system as in claim 11, wherein said controller, ~~[[in]]~~ for adjusting ~~[[a]]~~ said vehicle state, ~~adjusts~~ is operable to adjust at least one vehicle ~~state~~ operating condition selected from the group consisting of velocity, speed, directional heading, acceleration, location, steering wheel angle, brake status, throttle angle, turn signal status, traction control status, differential wheel speed, light status, turn indicator status, windshield wiper status, windshield wiper speed, and engine speed.

13. (Currently Amended) A vehicle safety system as in claim 11, wherein at least one said object detection sensor ~~receives~~ is operable to receive a cruise control signal, and said controller in response to said cruise control signal ~~adjusts~~ is operable to adjust said vehicle state.

14. (Currently Amended) A vehicle safety system as in claim 1, wherein said controller ~~adjusts~~ is operable to adjust a cruise control parameter in response to at least one said object detection signal.

15. (Currently Amended) A vehicle safety system as in claim 1, ~~wherein further comprising at least one light emitter optically coupled to said at least one beam-forming assembly[[.]]~~ said controller is operable to ~~independently adjusting~~ adjust each said beam illumination ~~output~~ pattern that is emitted by ~~[[of]]~~ each ~~[[of]]~~ said ~~at least one light emitter~~.

16. (Currently Amended) A vehicle safety system as in claim 1, wherein at least one said object detection signal is generated in response to illumination generated by and received from said at least one said object.

17. (Currently Amended) A vehicle safety system as in claim 1, wherein at least one said object detection signal is generated in response to at least one communicative light signal generated by and received from said at least one said object.

18. (Currently Amended) A vehicle safety system as in claim 1, wherein further comprising at least one light said emitter optically coupled ~~to said at least one beam-forming assembly and emitting~~ is operable to emit a communicative light signal, and at least one said object detection sensor ~~generating~~ is operable to generate at least one said object detection signal in response to said communicative light signal.

19. (Currently Amended) A headlight system for a vehicle, said headlight system comprising:

at least one light source;

at least one beam-forming assembly optically coupled to said at least one light source ~~and forming an illumination beam having a beam pattern that includes a beam angle, a beam focus, a beam amplitude, a beam position and a beam shape;~~

at least one emitter optically coupled to said at least one beam-forming assembly;

a ~~transceiver generating~~ transmitter operable to generate a first communication signal;

a receiver ~~receiving~~ operable to receive a second communication signal that is generated ~~from at least one~~ by an object that is external to ~~[[the]]~~ said vehicle and in response to said first communication signal; and

a controller coupled to said at least one beam-forming assembly, said transmitter, and said receiver;

wherein said controller is operable to control at least one said beam-forming assembly so as to configure light received from at least one said light source for emission via at least one said emitter to thereby produce at least one beam illumination pattern for enhancing visibility of a roadway;

wherein each said beam illumination pattern has associated beam illumination parameters including beam angle, beam focus, beam amplitude, beam position, and beam shape; and

wherein said controller is operable to adjusting change at least one said beam illumination beam pattern[[,]] including said beam shape[[,]] in response to said second communication signal by adjusting at least one of said beam illumination parameters.

20. (Currently Amended) A method of operating a headlight system ~~[[of]]~~ on a vehicle for adaptively illuminating a roadway to enhance visibility, said method comprising the steps of:

detecting at least one communication signal generated from at least one object that is external to ~~[[the]]~~ said vehicle; and

controlling said headlight system to adjusting ~~adjust its~~ illumination output, including ~~[[a]]~~ beam shape, ~~of the headlight system on said roadway~~ in response to said at least one communication signal.